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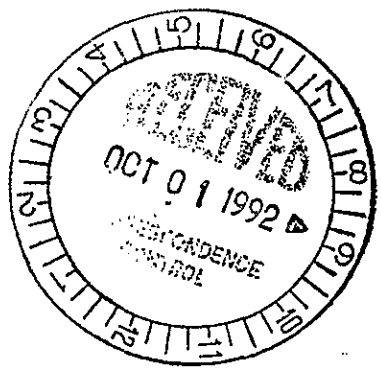
STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

7601 W. Clearwater, Suite 102 • Kennewick, Washington 99336 • (509) 546-2990

September 22, 1992



Mr. Steve Wisness
United States Department of Energy
Richland Operations Office
P.O. Box 550 MSIN: A5-19
Richland, Wa 99352

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Dear Mr. Wisness:

Re: LIQUID EFFLUENT RETENTION FACILITY PROJECT
1. SHELBY TUBE SAMPLING
2. LEACHATE COLLECTION SYSTEM DESIGN

The purpose of this letter is to elaborate on two areas of concern I have previously written and/or talked about with your staff on the LERF project.

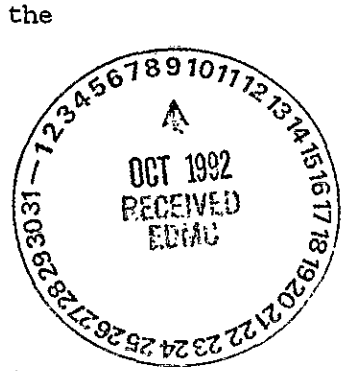
1. SHELBY TUBE SAMPLING:

This is in reference to your letter dated July 14, 1992. It is unfortunate that you have decided not to run the requested "Shelby Tube Sampling". Despite the fact that you agreed with all the technical reasoning pointed out in my letter to you dated May 8, 1992, you still cannot see the justification for running this test. The Shelby Tube Sampling and Permeating Tests are required and need to be carried out as soon as possible. The following is a brief list of facts and reasons justifying my position regarding this issue;

a. In accordance with the Code of Federal Regulations 40 CFR 264.221(c), the permeability of the soil/bontonite liner must not exceed 1 x 10^{-7} centimeter per second.

b. In accordance with the Code of Federal Regulations 40 CFR 264.225(a)(2), the soil/bentonite liner must be inspected for non-uniformities that may cause an increase in the permeability of the liner.

c. The soil/bentonite liners of the LERF basins were constructed under severe weather conditions.



These liners went through several freeze/thaw cycles before the bottom HDPE liners were installed over them. This can be verified from the Battelle weather reports that were attached to your letter referenced above.

d. The weather reports you submitted in your July 14 letter, do not indicate the "frost depth" in the soil during the construction period of the concerned liners. The method used by your site staff to check frost depth on site is not acceptable.

e. The results of the technical research referenced by your letter, by Dr. Haug of Canada, cannot be applied to the soil/bentonite mixture used at the LERF project. The percentages of fines in the LERF mix were closer to those used by Dr. Haug in his most recent investigations on the East Coast. In this recent investigation, the samples had 13-15% fines passing the 200 sieve and were subjected to five freeze/thaw cycles. The samples shrunk in volume. This loss of volume leads to desiccation and cracking in liners.

f. The permeability readings calculated from the Sealed Double Ring Infiltrometer on the test fill are not indicative of the permeability in the basins. The soil/bentonite mix of the test fill was shielded from the low temperatures the liners in the basins were subjected to.

To conform with the regulations outlined in (a) and (b) above, the soil/bentonite liner at the LERF basins must be sampled and tested. The technical facts (c) through (f) are enough to warrant, by the Washington State Department of Ecology (Ecology), that such a test is required to arrive at the required confidence to issue the permit to operate this facility.

2. The Leachate Collection System Design:

I was verbally informed of the design changes to the leachate collection system being investigated by Westinghouse Hanford Company (WHC) and Kaiser Engineers Company-Hanford (KEH) in the mean time. You are requested to furnish Ecology with the results of this investigation and the changes being implemented accordingly.

I was assured that tests will be carried out on site to verify the performance of the leachate retrieval pump and level sensors. You are requested to notify Ecology of the possible date and time of such tests for the construction inspection engineers to attend.

Your cooperation in this matter is appreciated. I request that you contact me at (509) 546-2995 if you need any clarification concerning any of the above.

Sincerely,

Moses Jaraysi
Environmental Engineer, LERF Project Unit Manager
Nuclear and Mixed Waste Management Program

MJ:mf

cc: D. Nylander, Ecology
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Administrative Record

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Subject: LIQUID EFFLUENT RETENTION FACILITY PROJECT

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